



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,563	06/15/2001	Steven M. Bennett	5038-90	9889

7590 06/07/2004
Julie L. Reed
MARGER JOHNSON & McCOLLUM, P.C.
1030 S.W. Morrison Street
Portland, OR 97205

EXAMINER

NOLAN, DANIEL A

ART UNIT PAPER NUMBER

2654

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. The filing of 22 March 2004 was entered to the following effect:
 - The title was changed as indicated and the objection is withdrawn as satisfied.
 - The specification was changed as indicated and the objections are withdrawn.
 - The claims were changed as indicated and the objections have been withdrawn.
 - Claims 31-46 were added and all claims were examined on the merits.

Drawings

3. The proposed replacement drawings were received on 22 March 2004. These drawings are accepted and the objections are withdrawn as satisfied.

Claim Rejections - 35 USC § 103

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art-Unit: 2654

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Kenne et al, Hsu et al & Guerreri

5. Claims 1, 2, 6, 7, 9, 10, 13-16, 18, 19, 21, 23, 24 & 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne et al ("Hybrid Language Models and Spontaneous Legal Discourse", 4th International Conference on Spoken Language, October 1996) in view of Hsu et al (U.S. Patent 5,677,991 A) and further in view of Guerreri (U.S. Patent 5,189,727 A).

6. Regarding claims 1, 13, 18 & 23; Kenne et al in describing *hybrid language models* reads on the features of the claim *for selecting a recognizer from a number of recognizers* as follows:

- Kenne et al (with the "transcripts" input on page 717, section 2, Data – in the right column) reads on the feature of *a) receiving an input stream*;
- Kenne et al (with the "perplexity" of the 2nd paragraph from end of left column to the top of the right column) reads on the feature of *b) deriving selection information, where the selection information includes performance-related information*;

Art-Unit: 2654

- Kerine et al (with the “switching” of section 4, Results – in the right column page 718) reads on the feature of *c) using the selection information to select results from at least one enabled recognizer*;
- Kenne et al does not mention *applications*. Hsu et al (with the invention for flexible speech recognition that selects isolated word speech or continuous speech recognizers) reads on the feature of *d) returning the results to the application* (61 in figure 2). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Hsu et al to the device/method of Kenne et al, providing a structure to put the strategy for selecting between recognizers into practice.
- With specific regard to claim 18, the *intrusion avoidance* of Hsu et al (51 in figure 2) corresponds to and performs the function of the *predictor* of the claim.

With further regard to the feature added to claims 1_c), 13_c), 18_c) and 23_c), 18_c), neither Hsu et al nor Kenne et al mention that *the recognizer is enabled based on expected future performance*. Guerreri, with the invention of a *method and apparatus for language and speaker recognition terms setting pattern recognition preferences* teaches the “future selection” technique that specifically enables the recognizer (column 4 lines 46-54). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Guerreri to the device/method of Hsu et al & Kenne et al because the objective of selecting one recognizer (over others) is to improve performance.

Art. Unit: 2654

7. Regarding claim 2, the claim is set forth with the same limits as claim 1.

Kenne et al (lines 8-11 of section 4, Results in right column page 718) teaches the feature that *causes a recognizer to be selected that is different than the recognizer used in a previous interaction* (by virtue of the fact that a switch is made *only* if the perplexity changes, which would occur *only* if the current interaction *differs from previous perplexities*).

Neither Kenne et al nor Guerreri disclose that *selection information is updated*; Hsu et al (lines 57-60) teaches this by setting the *reference score as a baseline* that is necessary to provide further evaluation. It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Hsu et al to the device/method of Kenne et al & Guerreri as a conventional programming method of preserving prior readings by storing them elsewhere to avoid their being overlaid by new measurements using the same algorithm code register fields.

8. Regarding claims 6 and 24; the claims are set forth with the same limits as claims 1 and 23, respectively. Kenne et al (in the 2nd paragraph of Section 4, Results – right column page 718) reads on the feature that *the enabling information* – and that consequently *the performance-related information* – *comprises at least one type of information from the group comprises of: channel characteristics, device characteristics, user information, contextual information, dialog state, recognizer costs and performance history*.

9. Regarding claims 7 and 14; the claims are set forth with the same limits as claims 1 and 13, respectively. Kenne et al (in the 1st line of page 718) records the classes of people into separate tracks to distinguish lawyers from witnesses, thereby reading on the feature that *deriving the selection information further comprises analyzing the input stream for channel characteristics*.

10. Regarding claims 9, 15 & 19; the claims are set forth with the same limits as claims 1, 13 & 18 respectively. Kenne et al (with Table 2 and the last paragraph of the right column, both on page 717) distinguishes between *Lawyers* and *Witnesses (Statements & Questions)*, thereby reading on the feature of *receiving contextual information associated with the input stream*.

11. Regarding claims 10 and 16, the claims are set forth with the same limits as claims 1 and 13, respectively. Kenne et al (with the "switching" of *Section 4, Results* – in the right column page 718) reads on the feature of *receiving recognizer information from the enabled recognizers to be used in the selection information*.

12. Regarding claim 21, the claim is set forth with the same limits as claim 18. Kenne et al (with the "switching" of section 4, Results – in the right column page 718) reads on the feature that *the predictor is operable to select a recognizer based upon the converted stream*.

Art-Unit: 2654

13. Regarding claim 32, the claim is set forth with the same limits as claim 18.

Kenne et al & Hsu et al do not disclose sources of *contextual information*.

Guerreri teaches that feature where *contextual information comprises information from at least one item of information derived from the set of information comprising information related to the environment around the input stream, characteristics of a user generating the input stream, information derived from a call using network services, gender, age, ethnicity, information relating to the user's first (native) language, personal information about the user, channel characteristics and device characteristics* (column 1 lines 19-30). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Guerreri to the device/method of Kenne et al & Hsu et al so as to identify speakers' statements when transcribing conversations.

Kenne et al, Hsu et al, Guerreri & Waibel et al⁹⁵⁷

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne et al in view of Hsu et al and further in view of Guerreri and further in view of Waibel et al⁹⁵⁷ (U.S. Patent 5,712,957 A).

15. Regarding claim 8, the claim is set forth with the same limits as claim 1.

Kenne et al, Hsu et al & Guerreri do not mention separate input devices so would not distinguish on that basis. The Waibel et al⁹⁵⁷ invention of a speech repair and

Art Unit: 2654

correction method for speech recognition system provides for different inputs (23 & 24 in figure 1) and consequently, using this information, locates error in hypothesis with highest score from list, generates control signals and second list, combines two lists and replaces error with hypothesis with highest combined score.

This reads on the feature of *analyzing the input stream for device characteristics*, which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Waibel et al⁹⁵⁷ to the device/method of Kenne et al, Hsu et al & Guerreri to allow the decision to be influenced by recognition that some devices increase the confidence of recognition results done on the streams they produce.

Kenne et al, Hsu et al, Guerreri & Kundu

16. Claims 11-12, 17 & 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne et al in view of Hsu et al and further in view of Guerreri and further in view of Kundu (U.S. Patent 5,924,066 A).

17. Regarding claims 11, 17 & 25; the claims are set forth with the same limits as claims 1, 13 and 23, respectively. Kenne et al, Hsu et al & Guerreri do not mention *feedback*. With the invention for *classifying a speech signal*, Kundu (column 9 lines 49-54) reads on the feature of *receiving feedback and including the feedback in the selection information*.

Art-Unit: 2654

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Kundu to the device/method of Kenne et al, Hsu et al & Guerreri to simplify training by including learned lessons on the basis of experience rather than attempting to predict all anticipated requirements.

18. Regarding claims 12 and 26; the claims are set forth with the same limits as claims 11 and 23, respectively. Kenne et al, Hsu et al & Guerreri do not mention *feedback*. Kundu (column 9 lines 50-51) reads on the feature that *feedback is received from one of the group comprised of: off-line analysis, user feedback, and feedback from the recognizer*.

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Kundu to the device/method of Kenne et al, Hsu et al & Guerreri to adjust for variations in confidence levels corresponding to changes in the input stream over time and with use.

Kenne et al, Hsu et al, Guerreri & Waibel et al^{'000}

19. Claims 20, 22, 38 & 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne et al in view of Hsu et al and further in view of Guerreri and further in view of Waibel et al^{'000} (U.S. Patent 5,855,000 A).

Art-Unit: 2654

20. Regarding claim 20, the claim is set forth with the same limits as claim 18.

Neither Kenne et al, Hsu et al nor Guerreri mention *confidence levels*. Waibel et al⁰⁰⁰ (column 1 lines 55-67) teach the feature that *the recognizers are also operable to provide individual-result confidence levels to the predictor*. Because the determination is to be made between recognizers, it would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Waibel et al⁰⁰⁰ to the device/method of Kenne et al, Hsu et al & Guerreri in order to select the product of the recognizer providing the highest level of confidence.

21. Regarding claim 22, the claim is set forth with the same limits as claim 18.

Kenne et al, Hsu et al & Guerreri all select after recognition. Waibel et al⁰⁰⁰ (108 in figure 3) teaches the feature *to select a recognizer prior to the recognizer receiving the input stream* (column 7 lines 57-60) which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Waibel et al⁰⁰⁰ to the device/method of Kenne et al, Hsu et al & Guerreri because there is no need to operate recognition when controlling information would override selection.

22. Regarding claims 38 & 39; the claims are set forth with the same limits as claims

20 & 23, respectively. Neither Kenne et al, Hsu et al nor Guerreri mention *confidence levels*. Waibel et al⁰⁰⁰ teaches the feature where *the predictor determines, for each*

Art Unit: 2654

recognizer in the system and for each situation, a recognizer-based confidence value (column 1 lines 63-64). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Waibel et al⁰⁰⁰ to the device and/or method of Kenne et al, Hsu et al or Guerreri for making a preliminary selection by simply examining a confidence score to avoid the expense of comparing processing results.

Kenne et al, Hsu et al, Guerreri & Goldberg et al

23. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenne et al in view of Hsu et al and further in view of Guerreri and further in view of Goldberg et al (U.S. Patent 5,970,446 A).

24. Regarding claim 33, the claim is set forth with the same limits as claim 32. Kenne et al, Hsu et al & Guerreri do not disclose *dynamically* processing contextual information. Goldberg et al, with the invention for *selective noise/channel/coding models and recognizers for automatic speech recognition*, teaches the feature where *the contextual information is obtained dynamically* (column 5 lines 3-6). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Goldberg et al to the device/method of Kenne et al, Hsu et al & Guerreri to continue to operate despite changes.

Art. Unit: 2654

25. Regarding claim 34, the claim is set forth with the same limits as claim 32.

Kenne et al, Hsu et al & Guerreri do not disclose *dynamically* processing contextual information. Goldberg et al teaches the feature where *the contextual information is predetermined* (column 4 line 58-64). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Goldberg et al to the device/method of Kenne et al, Hsu et al & Guerreri to repeat the results of previous processing when conditions recur.

Allowable Subject Matter

26. Claims 3-5, 27-31, 35-37, 40-46 are allowed.

27. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

28. The following is a statement of reasons for the indication of allowable subject matter:

- The present invention is directed to *processing speech using one of several available recognition devices*.
- Claims 3, 4 and 27 identify the uniquely distinct feature that "*the enabling information is used to enable a recognizer based upon its expected future performance*".

Art Unit: 2654

- The closest prior art of Guerreri and Kenne et al teach that “*the enabling information is used to enable a recognizer*” but, where it would be obvious that the motive to enable/select a *recognizer* would be produce an expected performance/result, indications on performance are based on *current* or *past performance* and is not separately considered or derived as *enabling information*, as opposed to merely *selecting information*” as distinguished in the application. Consequently, the prior art of reference fails to anticipate or render the above underlined limitations obvious.
- Claims 5, 28-31, 35-37, 40-46 depend on claims that were allowed.

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2654

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

30. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,

or mailed to: Mail Stop AF (or CPA, etc. – see Official Gazette, 04 November 2003)
P.O. Box 1450
Alexandria, VA 22313-1450

or hand-deliver to: Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan
Examiner
Art Unit 2654

DAN/d
May 25, 2004


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER